

APPENDIX C
FEASIBILITY ASSESSMENT OF HOUSING PROTOTYPES WITH DENSITY BONUS

CITY OF LONG BEACH
INCLUSIONARY HOUSING STUDY

June 13, 2003

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Appendix C**

**Feasibility Assessment of Housing Prototypes
with Density Bonus**

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Table C-1
Feasibility of Renter Housing Prototype Projects
Long Beach Inclusionary Housing Affordability Gap Analysis

	Renter 1	Renter 2
PROTOTYPE	Townhomes	Type V Stacked Flats Apartments
Total Unit Count	22 Units	50 Units
Zoning	R-3-T	R-4-R, R-4-N
FAR	0.64	1.76
Resident Population	Family	Family
Product Type	Townhomes 2 Stories	Stacked Flats 5 Stories
Construction Type	Type V	Type V
Density (DU's/Acre)	25	70
Gross Site Area (Sq. Ft.)	38,333	31,102
Net Land Area (Sq. Ft.)	38,333	31,102
Lot Area Per Unit (SF)	1,742	622
Units by BR Count		
Loft	0	0
One Bedroom	4	7
Two Bedroom/1 Bath	3	8
Two Bedroom/2 Bath	11	25
Three Bedroom	4	10
Manager's (2 BR/2 BA)	0	0
Unit Size (Net SF)		
Loft	0	0
One Bedroom	900	800
Two Bedroom/1 Bath	950	950
Two Bedroom/2 Bath	1000	1000
Three Bedroom	1200	1100
Ave. (Exclud. Mgr's)	1,011	984
Building Square Feet		
Net Living Area	22,250	49,200
Community Space	0	0
Total Net Bldg. SF	22,250	49,200
Total Gross Bldg. SF	24,722	54,667
Type of Parking	1 Level Semi-Subterranean	1 Level Subterranean (1)
Total Levels Parking	1 Level	2 Levels
No. of Parking Spaces	55	113
SF per Parking Space	136.5 SF	136.6 SF
Total Parking Area	7,508 SF	15,441 SF
Zoning Requirements: (2)		
Maximum Density (DU's/Acre)	25 DU's/Acre	44 DU's/Acre
Maximum Building Height (Feet)	28 Ft	65 Ft
Maximum Lot Coverage	N/A	50%
Min. Open Space Per Unit	200 SF	150 SF
FAR and Lot Coverage:		
Footprint (3)		
Units	12,361	10,933
Parking	7,508	7,721
Open Space	4,400	7,500
Total (4)	19,869	18,433
	Fits on Lot	Fits on Lot
Lot Coverage (5)	0.52	0.59
FAR (6)	0.64	1.76

(1) Plus 1 ground level parking.

(2) Source: City of Long Beach Housing Element, April, 2001.

(3) Equals gross housing/parking square feet divided by the number of stories of housing/parking.

(4) For prototypes with units built over parking, total footprint is assumed the larger of unit or parking footprint plus open space.

(5) Unit footprint divided by net site area.

(6) Gross unit plus parking square footage divided by net site area.

Source: David Paul Rosen & Associates.

Table C-2
Feasibility of Renter Housing Prototype Projects
Long Beach Inclusionary Housing Affordability Gap Analysis

PROTOTYPE	Renter 1 Townhomes	Renter 2 Type V Stacked Flats Apartments
Total Unit Count	28 Units	63 Units
Zoning	R-3-T	R-4-R, R-4-N
FAR	0.82	2.21
Resident Population	Family	Family
Product Type	Townhomes 2 Stories	Stacked Flats 5 Stories
Construction Type	Type V	Type V
Density (DU's/Acre)	32	88
Gross Site Area (Sq. Ft.)	38,333	31,102
Net Land Area (Sq. Ft)	38,333	31,102
Lot Area Per Unit (SF)	1,369	494
Units by BR Count		
Loft	0	0
One Bedroom	5	9
Two Bedroom/1 Bath	4	10
Two Bedroom/2 Bath	14	32
Three Bedroom	5	12
Manager's (2 BR/2 BA)	0	0
Unit Size (Net SF)		
Loft	0	0
One Bedroom	900	800
Two Bedroom/1 Bath	950	950
Two Bedroom/2 Bath	1000	1000
Three Bedroom	1200	1100
Ave. (Exclud. Mgr's)	1,011	984
Building Square Feet		
Net Living Area	28,300	61,900
Total Gross Bldg. SF	31,444	68,778
Type of Parking	1 Level Semi-Subterranean	1 Level Subterranean (1)
Total Levels Parking	1 Level	2 Levels
No. of Parking Spaces	69	141
SF per Parking Space	136.5 SF	136.6 SF
Total Parking Area	9,384 SF	19,301 SF
Zoning Requirements: (2)		
Maximum Density (DU's/Acre)	25 DU's/Acre	44 DU's/Acre
Maximum Building Height (Feet)	28 Ft	65 Ft
Maximum Lot Coverage	N/A	50%
Min. Open Space Per Unit	200 SF	150 SF
FAR and Lot Coverage:		
Footprint (3)		
Units	15,722	13,756
Parking	9,384	9,651
Open Space	5,600	9,450
Total (4)	25,106	23,206
	Fits on Lot	Fits on Lot
Lot Coverage (5)	0.65	0.75
FAR (6)	0.82	2.21

(1) Plus 1 ground level parking.

(2) Source: City of Long Beach Housing Element, April, 2001.

(3) Equals gross housing/parking square feet divided by the number of stories of housing/parking.

(4) For prototypes with units built over parking, total footprint is assumed the larger of unit or parking footprint plus open space.

(5) Unit footprint divided by net site area.

(6) Gross unit plus parking square footage divided by net site area.

Source: David Paul Rosen & Associates.

Table C-3
Feasibility of Renter Housing Prototype Projects
Long Beach Inclusionary Housing Affordability Gap Analysis

PROTOTYPE	Renter 1 Townhomes	Renter 2 Type V Stacked Flats Apartments
Total Unit Count Zoning FAR Resident Population Product Type Construction Type Density (DU's/Acre)	33 Units R-3-T 0.96 Family Townhomes 2 Stories Type V 38	75 Units R-4-R, R-4-N 2.63 Family Stacked Flats 5 Stories Type V 105
Gross Site Area (Sq. Ft.) Net Land Area (Sq. Ft) Lot Area Per Unit (SF)	38,333 38,333 1,162	31,102 31,102 415
Units by BR Count Loft One Bedroom Two Bedroom/1 Bath Two Bedroom/2 Bath Three Bedroom Manager's (2 BR/2 BA) Unit Size (Net SF) Loft One Bedroom Two Bedroom/1 Bath Two Bedroom/2 Bath Three Bedroom Ave. (Exclud. Mgr's) Building Square Feet Net Living Area Total Gross Bldg. SF	0 6 5 17 5 0 0 900 950 1000 1200 1,011 33,150 36,833	0 11 12 38 14 0 0 800 950 1000 1100 984 73,600 81,778
Type of Parking Total Levels Parking No. of Parking Spaces SF per Parking Space Total Parking Area	1 Level Semi-Subterranean 1 Level 83 136.5 SF 11,261 SF	1 Level Subterranean (1) 2 Levels 170 136.6 SF 23,162 SF
Zoning Requirements: (2) Maximum Density (DU's/Acre) Maximum Building Height (Feet) Maximum Lot Coverage Min. Open Space Per Unit	25 DU's/Acre 28 Ft N/A 200 SF	44 DU's/Acre 65 Ft 50% 150 SF
FAR and Lot Coverage: Footprint (3) Units Parking Open Space Total (4) Lot Coverage (5) FAR (6)	18,417 11,261 6,600 29,678 Fits on Lot 0.77 0.96	16,356 11,581 11,250 27,606 Fits on Lot 0.89 2.63

(1) Plus 1 ground level parking.

(2) Source: City of Long Beach Housing Element, April, 2001.

(3) Equals gross housing/parking square feet divided by the number of stories of housing/parking.

(4) For prototypes with units built over parking, total footprint is assumed the larger of unit or parking footprint plus open space.

(5) Unit footprint divided by net site area.

(6) Gross unit plus parking square footage divided by net site area.

Source: David Paul Rosen & Associates.

Table C-4
Feasibility of Owner Housing Prototype Projects
Long Beach Inclusionary Housing Analysis

PROTOTYPE	Owner 1 Single-Family Detached Infill	Owner 2 Attached Townhomes	Owner 3 Type V Condos	Owner 4 Type 1>75' Condos
Total Unit Count	10 Units	22 Units	50 Units	100 Units
Zoning	R-1-M, R-1-S, R-1-T	R-3-T	R-4-R, R-4-N	R-4-U
FAR	0.44	0.75	1.98	2.94
Resident Population	Family	Family	Family	Family
Product Type	SFD 2 Story, PUD	Townhomes 2 Stories	Stacked Flats, 4 Stories	Stacked Flats, 6 Stories
Construction Type	Type V	Type V	Type V	Type I
Density (DU's/Acre)	15 DU's/Acre	25 DU's/Acre	70 DU's/Acre	100 DU's/Acre
Gross Site Area (Sq. Ft.)	36,482	38,333	30,928	43,560
Net Land Area (Sq. Ft.)	29,185	38,333	30,928	43,560
Lot Area Per Unit (SF)	2,919	1,742	619	436
Units by BR Count				
Lofts	0	0	0	10
One Bedroom	0	0	7	10
Two Bedroom/1 Bath	0	13	8	10
Two Bedroom/2 Bath	4	0	25	50
Three Bedroom	6	9	10	20
Unit Size (Net SF)				
Lofts	1,150	0	0	0
One Bedroom	0	0	750	750
Two Bedroom/1 Bath	1150	925	925	925
Two Bedroom/2 Bath	1350	1,300	1,300	1,300
Three Bedroom	0	1,500	0	0
Ave. (Exclud. Mgr's)	1,270	1,160	903	818
Building Square Feet				
Total Net Bldg. SF	12,700	25,525	45,150	81,750
Total Gross Bldg. SF	12,700	28,889	61,222	128,235
Type of Parking	Attached Garages 4,000 S.F.	1 Level Semi-Subterranean 7,508 S.F.	1 Level Subterranean (1) 15,441 S.F.	2 Levels Subterranean (1) 30,724 S.F.
Total Levels Parking	N/A	1 Level	2 Levels	3 Levels
No. of Parking Spaces	20	55	113	225
SF per Parking Space	200 SF	137 SF	137 SF	137 SF
Total Parking Area	4,000 SF	7,508 SF	15,441 SF	30,724 SF
Prototype Characteristics:				
Average Lot Area/Unit	2,919 SF	1,742 SF	619 SF	436 SF
Ave. Bldg. Footprint/Unit	635 SF	N/A	N/A	N/A
Zoning Requirements:				
Minimum Front Yard	20	N/A	N/A	N/A
Minimum Side Yard	4	N/A	N/A	N/A
Minimum Rear Yard	10	N/A	N/A	N/A
Buildable Footprint/Lot	969.384	N/A	N/A	N/A
Max. Density (DU's/Acre)	14 DU's/Acre	25 DU's/Acre	44 DU's/Acre	108 DU's/Acre
Min. Open Space/Unit (2)	16%	200 SF	150 SF	150 SF
FAR and Lot Coverage				
Footprint (3)				
Units	6,350	14,444	15,306	21,373
Parking	4,000	7,508	7,721	10,241
Open Space	467	4,400	7,500	2,500
Total (4)	10,817	26,352	22,806	23,873
	Fits on Lot	Fits on Lot	Fits on Lot	Fits on Lot
Lot Coverage (5)	0.37	0.69	0.74	0.55
FAR (6)	0.44	0.75	1.98	2.94

(1) Plus 1 ground level parking.

(1) For Owner #3 and #4, equals weighted average minimum lot area per unit based on minimum lot areas by bedroom count, zoning and prototype bedroom count distribution.

(2) Equals weighted average open space required per unit based on open space requirements by bedroom count and zoning and prototype bedroom count distribution. 50% of total open space must be "common open space".

(3) Equals gross housing/parking square feet divided by the number of stories of housing/parking.

(4) For prototypes with units built over parking, total footprint is assumed the larger of unit or parking footprint plus open space footprint. For Owner #4, assumes open space is provided in balconies and roof decks as well as on the ground floor.

(5) Unit footprint divided by net site area.

(6) Gross unit plus parking square footage divided by net site area.

Source: David Paul Rosen & Associates.

Table C-5
Feasibility of Owner Housing Prototype Projects With Density Bonus
Long Beach Inclusionary Housing Analysis

	Owner 1	Owner 2	Owner 3	Owner 4
PROTOTYPE	Single-Family Detached Infill	Attached Townhomes	Type V Condos	Type 1>75' Condos
Density Bonus Percent	25%	25%	25%	25%
Total Unit Count	13 Units	28 Units	63 Units	125 Units
Zoning	R-1-M, R-1-S, R-1-T	R-3-T	R-4-R, R-4-N	R-4-U
FAR	0.44	0.75	1.98	2.94
Resident Population	Family	Family	Family	Family
Product Type	Townhomes 2 Stories	Townhomes 2 Stories	Stacked Flats, 5 Stories	Stacked Flats, 9 Stories
Construction Type	Type V	Type V	Type V	Type I
Density (DU's/Acre)	19 DU's/Acre	32 DU's/Acre	89 DU's/Acre	125 DU's/Acre
Gross Site Area (Sq. Ft.)	36,482	38,333	30,928	43,560
Net Land Area (Sq. Ft.)	29,185	38,333	30,928	43,560
Lot Area Per Unit (SF)	2,245	1,369	491	348
Units by BR Count				
Lofts	0	0	0	13
One Bedroom	0	0	9	13
Two Bedroom/1 Bath	0	17	10	13
Two Bedroom/2 Bath	5	0	32	63
Three Bedroom	8	11	12	23
Unit Size (Net SF)				
Lofts	0	0	0	800
One Bedroom	0	0	800	800
Two Bedroom/1 Bath	0	1,100	1,000	1,000
Two Bedroom/2 Bath	1,150	0	1,100	1,100
Three Bedroom	1,350	1,300	1,400	1,400
Ave. (Exclud. Mgr's)	1,270	1,182	1,102	1,090
Building Square Feet				
Total Net Bldg. SF	16,550	33,000	69,200	135,300
Total Gross Bldg. SF	16,550	36,667	76,889	159,176
Type of Parking	1 Level Semi-Subterranean	1 Level Semi-Subterranean	1 Level Subterranean (1)	2 Levels Subterranean (1)
	3,425 S.F.	9,419 S.F.	19,267 S.F.	38,371 S.F.
Total Levels Parking	1 Level	1 Level	2 Levels	3 Levels
No. of Parking Spaces	25	69	141	281
SF per Parking Space	137 SF	137 SF	137 SF	137 SF
Total Parking Area	3,413 SF	9,419 SF	19,267 SF	38,371 SF
Prototype Characteristics:				
Average Lot Area/Unit	2,245 SF	1,369 SF	491 SF	348 SF
Ave. Bldg. Footprint/Unit	635 SF	N/A	N/A	N/A
Zoning Requirements:				
Minimum Front Yard	N/A	N/A	N/A	N/A
Minimum Side Yard	N/A	N/A	N/A	N/A
Minimum Rear Yard	N/A	N/A	N/A	N/A
Buildable Footprint/Lot	N/A	N/A	N/A	N/A
Max. Density (DU's/Acre)	14 DU's/Acre	25 DU's/Acre	44 DU's/Acre	108 DU's/Acre
Min. Open Space/Unit (2)	16%	200 SF	150 SF	150 SF
FAR and Lot Coverage				
Footprint (3)				
Units	8,275	18,333	15,378	17,686
Parking	3,413	9,419	9,634	12,790
Open Space	359	5,600	9,450	2,083
Total (4)	12,047	33,352	24,828	19,770
	Fits on Lot	Fits on Lot	Fits on Lot	Fits on Lot
Lot Coverage (5)	0.41	0.87	0.80	0.45
FAR (6)	0.57	0.96	2.49	3.65

(1) Plus 1 ground level parking.

(1) For Owner #3 and #4, equals weighted average minimum lot area per unit based on minimum lot areas by bedroom count, zoning and prototype bedroom count distribution.

(2) Equals weighted average open space required per unit based on open space requirements by bedroom count and zoning and prototype bedroom count distribution. 50% of total open space must be "common open space".

(3) Equals gross housing/parking square feet divided by the number of stories of housing/parking.

(4) For prototypes with units built over parking, total footprint is assumed the larger of unit or parking footprint plus open space footprint.

For Owner #4, assumes open space is provided in balconies and roof decks as well as on the ground floor.

(5) Unit footprint divided by net site area.

(6) Gross unit plus parking square footage divided by net site area.

Source: David Paul Rosen & Associates.

Table C-6
Feasibility of Owner Housing Prototype Projects With Density Bonus
Long Beach Inclusionary Housing Analysis

	Owner 1	Owner 2	Owner 3	Owner 4
PROTOTYPE	Single-Family Detached Infill	Attached Townhomes	Type V Condos	Type 1>75' Condos
Density Bonus Percent	50%	50%	50%	50%
Total Unit Count	15 Units	33 Units	75 Units	150 Units
Zoning	R-1-M, R-1-S, R-1-T	R-3-T	R-4-R, R-4-N	R-4-U
FAR	0.44	0.75	1.98	2.94
Resident Population	Family	Family	Family	Family
Product Type	Townhomes 2 Stories	Townhomes 2 Stories	Stacked Flats, 5 Stories	Stacked Flats, 9 Stories
Construction Type	Type V	Type V	Type V	Type I
Density (DU's/Acre)	22 DU's/Acre	38 DU's/Acre	106 DU's/Acre	150 DU's/Acre
Gross Site Area (Sq. Ft.)	36,482	38,333	30,928	43,560
Net Land Area (Sq. Ft)	29,185	38,333	30,928	43,560
Lot Area Per Unit (SF)	1,946	1,162	412	290
Units by BR Count				
Lofts	0	0	0	15
One Bedroom	0	0	11	15
Two Bedroom/1 Bath	0	20	12	15
Two Bedroom/2 Bath	6	0	38	75
Three Bedroom	9	13	14	30
Unit Size (Net SF)				
Lofts	0	0	0	800
One Bedroom	0	0	800	800
Two Bedroom/1 Bath	0	1,100	1,000	1,000
Two Bedroom/2 Bath	1,150	0	1,100	1,100
Three Bedroom	1,350	1,300	1,400	1,400
Ave. (Exclud. Mgr's)	1,270	1,182	1,102	1,090
Building Square Feet				
Total Net Bldg. SF	19,050	38,900	82,200	163,500
Total Gross Bldg. SF	19,050	43,222	91,333	192,353
Type of Parking	Attached Garages	1 Level Semi-Subterranean	1 Level Subterranean (1)	2 Levels Subterranean (1)
Total Levels Parking	4,110 S.F. N/A	11,330 S.F. 1 Level	23,230 S.F. 2 Levels	46,154 S.F. 3 Levels
No. of Parking Spaces	30	83	170	338
SF per Parking Space	200 SF	137 SF	137 SF	137 SF
Total Parking Area	6,000 SF	11,330 SF	23,230 SF	46,154 SF
Prototype Characteristics:				
Average Lot Area/Unit	1,946 SF	1,162 SF	412 SF	290 SF
Ave. Bldg. Footprint/Unit	635 SF	N/A	N/A	N/A
Zoning Requirements:				
Minimum Front Yard	20	N/A	N/A	N/A
Minimum Side Yard	4	N/A	N/A	N/A
Minimum Rear Yard	10	N/A	N/A	N/A
Buildable Footprint/Lot	126,256	N/A	N/A	N/A
Adequate to fit home				
Max. Density (DU's/Acre)	14 DU's/Acre	25 DU's/Acre	44 DU's/Acre	108 DU's/Acre
Min. Open Space/Unit (2)	16%	200 SF	150 SF	150 SF
FAR and Lot Coverage				
Footprint (3)				
Units	9,525	21,611	18,267	21,373
Parking	6,000	11,330	11,615	15,385
Open Space	311	6,600	11,250	2,500
Total (4)	15,836	39,541	29,517	23,873
Fits on Lot	Fits on Lot	Does Not Fit on Lot	Fits on Lot	Fits on Lot
Lot Coverage (5)	0.54	1.03	0.95	0.55
FAR (6)	0.65	1.13	2.95	4.42

(1) Plus 1 ground level parking.

(1) For Owner #3 and #4, equals weighted average minimum lot area per unit based on minimum lot areas by bedroom count, zoning and prototype bedroom count distribution.

(2) Equals weighted average open space required per unit based on open space requirements by bedroom count and zoning and prototype bedroom count distribution. 50% of total open space must be "common open space".

(3) Equals gross housing/parking square feet divided by the number of stories of housing/parking.

(4) For prototypes with units built over parking, total footprint is assumed the larger of unit or parking footprint plus open space footprint.

For Owner #4, assumes open space is provided in balconies and roof decks as well as on the ground floor.

(5) Unit footprint divided by net site area.

(6) Gross unit plus parking square footage divided by net site area.

Source: David Paul Rosen & Associates.